

RESPONSE TO ELECTION OF SPECIES REQUIREMENT
U.S. Appln. No. 10/049,670

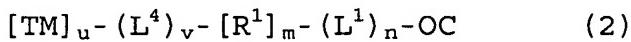
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-54. (Cancelled).

Claim 55. (Previously Presented) A targeted bipolar lipid represented by formula (2):



wherein:

TM is a targeting molecule;

R^1 is a hydrocarbon chain optionally substituted by one or more hydrophilic hydrocarbons each containing at least one atom or group capable of being solvated by water, provided that at least one hydrocarbon chain is substituted by at least one hydrophilic hydrocarbon and each hydrophilic hydrocarbon is attached to the hydrocarbon chain to achieve at least a ten atom spacing along the chain between the hydrophilic hydrocarbon and the group $-(L^1)_n - OC$;

m is an integer of from 1 to 6;

L^1 is a linker atom or group;

n is zero or the integer 1;

OC is an oligocation;

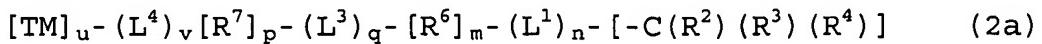
u is an integer 1 or 2;

L^4 is a linker atom or group; and

v is zero or the integer 1.

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Claim 56. (Previously Presented) The lipid according to Claim 55, wherein said lipid is represented by formula (2a):



wherein:

TM, u, L⁴, v, L¹, m and n are as defined for formula (2);

R⁷ is a hydrophilic hydrocarbon containing at least two atoms or groups capable of being solvated by water;

p is an integer of from 1 to 6;

L³ is a linker atom or group;

q is zero or an integer of from 1 to 6;

R⁶ is a hydrocarbon chain;

R² is a hydrogen atom or an optionally substituted aliphatic, cycloaliphatic, heteroaliphatic, heterocycloaliphatic, aromatic or heteroaromatic group optionally containing one or more cationic centers; and

R³ and R⁴, which may be the same or different, is each an optionally substituted aliphatic, cycloaliphatic, heteroaliphatic, heterocycloaliphatic, aromatic or heteroaromatic group containing one of more cationic centers or R³ and R⁴ together with the carbon atom to which they are attached form a cycloaliphatic, heterocycloaliphatic, aromatic or heteroaromatic group containing two or more cationic centers.

Claim 57. (Currently Amended) The lipid according to ~~Claim 55 or~~ Claim 56, wherein TM is an antibody or an antigen binding fragment or derivative thereof.

Claim 58. (Currently Amended) The lipid according to ~~Claim 55~~56, wherein u is the integer 1.

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Claim 59. (Currently Amended) The lipid according to
Claim 5556, wherein:

v is the integer 1; and

L^4 is $-(Alk^1)_r(X^1)_s(Alk^2)_t-$,

wherein X^1 is an -0- atom; a -S- atom; -C(0)-; -C(0)O-;
-C(S)-; -S(0); -S(0)₂-; -N(R⁵)-; -CON(R⁵)-; -OC(0)N(R⁵)-;
-CSN(R⁵)-; -N(R⁵)CO-; N(R⁵)C(0)O-; -N(R⁵)CS-; -S(O)N(R⁵)-;
-S(O)₂N(R⁵)-; -N(R⁵)S(0)-; -N(R⁵)S(O)₂-; -N(R⁵)CON(R⁵)-; or
-N(R⁵)SO₂N(R⁵)-,

wherein R⁵ is a hydrogen atom, a straight or branched
alkyl group or an -Alk¹X¹- chain;

wherein in any of the groups containing two R⁵
substituents each R⁵ may be the same or different;

wherein Alk¹ and Alk², which may be the same or
different, is each an optionally substituted straight or
branched C₁₋₁₀alkylene, C₂₋₁₀alkenylene or C₂₋₁₀alkynylene chain
optionally interrupted or terminated by at least one carbocyclic
or heterocarbocyclic groups and/or heteroatoms or heteroatom
containing groups X¹; and

r, s, and t, which may be the same or different, is each
zero or the integer 1, provided that when one of r, s or t is
zero, at least one of the remainder is the integer 1.

Claim 60. (Previously Presented) The lipid according to
Claim 59, wherein L⁴ is an -NHCO(Alk²)_t- group.

Claim 61. (Previously Presented) The lipid according to
Claim 56, wherein R² is a hydrogen atom; and R³ and R⁴ are each
Sp¹[WSp²]_bWSp³ or -Sp¹[WSp²]_bWH, wherein Sp¹, Sp² and Sp³, which may

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be the same or different, is each a spacer group, W is a cationic center and b is zero or an integer from 1 to 6.

Claim 62. (Previously Presented) The lipid according to Claim 61, wherein Sp¹, Sp² and Sp³ is each an optionally substituted aliphatic, cycloaliphatic, heteroaliphatic, heterocycloaliphatic, aromatic or heteroaromatic group.

Claim 63. (Previously Presented) The lipid according to Claim 62, wherein Sp¹, Sp² and Sp³ is each an optionally substituted C₁₋₆alkylene chain.

Claim 64. (Previously Presented) The lipid according to Claim 61, wherein W is a -NH- group.

Claim 65. (Previously Presented) The lipid according to Claim 61, wherein b is an integer of from 1 to 3.

Claim 66. (Previously Presented) The lipid according to Claim 56, wherein -C(R²)(R³)(R⁴) is -CH[Sp¹NHSp²NH₂]₂, -CH[Sp¹NHSp²NHSp²NH₂]₂ or -CH[SP¹NHSp²NHSp²NHCH₃]₂, wherein Sp¹ is -CH₂- and each Sp² is -(CH₂)₃- or -(CH₂)₄-.

Claim 67. (Currently Amended) The lipid according to Claim 5556, wherein n in -(L¹)_n- is the integer 1.

Claim 68. (Previously Presented) The lipid according to Claim 67, wherein L¹ is -X¹Alk²- or -[X¹]₂Alk¹X¹Alk²-,

wherein X¹ is an -O- atom; a -S- atom; -C(0)-; -C(0)O-; -C(S)-; -S(0); -S(O)₂-; -N(R⁵)-; -CON(R⁵)-; -OC(O)N(R⁵)-; -CSN(R⁵)-; -N(R⁵)CO-; N(R⁵)C(0)O-; -N(R⁵)CS-; -S(O)N(R⁵)-; -S(O)₂N(R⁵)-; -N(R⁵)S(0)-; -N(R⁵)S(0)₂-; -N(R⁵)CON(R⁵)-; or -N(R⁵)SO₂N(R⁵)-:

wherein R⁵ is a hydrogen atom, a straight or branched alkyl group or an -Alk¹X¹- chain,

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wherein in any of the groups containing two R⁵ substituents each R⁵ may be the same or different;

wherein Alk¹ and Alk², which may be the same or different, is each an optionally substituted straight or branched C₁₋₆alkylene, C₂₋₆alkenylene or C₂₋₆alkynylene chain optionally interrupted or terminated by at least one carbocyclic or heterocarbocyclic groups and/or heteroatoms or heteroatom containing groups X¹.

Claim 69. (Previously Presented) The lipid according to Claim 68, wherein X¹ is a -CONH- group, Alk¹ is a -CH₂-CH₂ chain and Alk² is a -(CH₂)₄- chain, -(CH₂)₅- chain or -(CH₂)₆- chain.

Claim 70. (Currently Amended) The lipid according to Claim 5556, wherein m is an integer 1 or 2.

Claim 71. (Previously Presented) The lipid according to Claim 56, wherein R⁶ is an optionally substituted C₁₀₋₅₀aliphatic chain.

Claim 72. (Previously Presented) The lipid according to Claim 71, wherein R⁶ is a linear, optionally substituted C₁₆₋₃₈alkylene chain.

Claim 73. (Previously Presented) The lipid according to Claim 56, wherein q is the integer 1 and p is the integer 1 or 2.

Claim 74. (Previously Presented) The lipid according to Claim 56, wherein L³ is -X¹-, -X¹Alk¹X¹- or [X¹Alk¹]₁X¹Alk²X¹,

wherein X¹ is an -O- atom; a -S- atom; -C(0)-; -C(0)O-; -C(S)-; -S(0); -S(0)₂-; -N(R⁵)-; -CON(R⁵)-; -OC(0)N(R⁵)-; -CSN(R⁵)-; -N(R⁵)CO-; N(R⁵)C(0)O-; -N(R⁵)CS-; -S(0)N(R⁵)-;

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-S(0)₂N(R⁵) - ; -N(R⁵)S(0) - ; -N(R⁵)S(0)₂- ; -N(R⁵)CON(R⁵) - ; or
-N(R⁵)SO₂N(R⁵) - group;

wherein R⁵ is a hydrogen atom, a straight or branched alkyl group or an -Alk¹X¹- chain;

wherein in any of the groups containing two R⁵ substituents each R⁵ may be the same or different;

wherein Alk¹ and Alk², which may be the same or different, is each an optionally substituted straight or branched C₁₋₆alkylene, C₂₋₆alkenylene or C₂₋₆alkynylene chain optionally interrupted or terminated by at least one carbocyclic or heterocarbocyclic groups and/or heteroatoms or heteroatom containing groups X¹.

Claim 75. (Previously Presented) The lipid according to Claim 74, wherein L³ is a -NHC0-, -CONH-, -CONH(CH₂)₂NHCO-, or -[CONH(CH₂)₂-]₂NCO(CH₂)₂CONH group.

Claim 76. (Previously Presented) The lipid according to Claim 56, wherein R⁷ is a synthetic or naturally occurring polyol or a poly(alkylene oxide) or a derivative thereof.

Claim 77. (Previously Presented) The lipid according to Claim 76, wherein R⁷ is a poly(alkylene oxide) or a derivative thereof.

Claim 78. (Previously Presented) The lipid according to Claim 77, wherein R⁷ is a poly(ethylene oxide).

Claim 79. (Previously Presented) The lipid according to Claim 59, wherein R⁵ is a methyl or ethyl group.

Claim 80. (Previously Presented) The lipid according to Claim 68, wherein R⁵ is a methyl or ethyl group.

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Claim 81. (Previously Presented) The lipid according to
Claim 74, wherein R⁵ is a methyl or ethyl group.